REMARKS

Objection to the drawings

The applicant does not understand the examiner's rejection to the drawings. Drawings are only required if necessary for the understanding of the subject matter. The sequence number, destination address, source address, destination port, source port and TCP control bits for package messages sent in a TCP/IP environment are well known parts of a TCP message. Clearly, the examiner cannot take the position that one skilled in the art would not know how to determine whether an acknowledgement message corresponds to a transmitted massage including the consideration of the well known parts of a TCP message.

As is shown by the art cited by the examiner, it is well known to compare information contained in the acknowledgement message to determine if a message was successfully received in a TCP/IP environment.

Reconsideration and withdrawal of the objection under 37 C.F.R. § 1.83(a) are respectfully requested.

Objection to the Specification

In response to the Examiner's objection, the specification has been amended to correct typographical errors. No new matter has been added. Entry of the amendment is respectfully requested.

<u>Rejection under 35 U.S.C. § 112, First Paragraph</u>

The Examiner rejects claims 2, 7 and 9 under 35 U.S.C. § 112, first paragraph. In supporting this rejection, the Examiner alleges that the specification does not adequately describe "how to consider the sequence number, destination address . . . ." The applicant does not understand this rejection. Claims 2 and 9 are method claims, and the phrase objected to by the examiner further limits the step of "comparing the received acknowledgement packet from the destination station with the retransmission packet in the message queue at the source radio". Thus, it is clear that the acknowledgement packet and the retransmission packet are compared by evaluating the sequence number, destination address, source address, destination port, source port and TCP control bits of the retransmission message with the data contained in the acknowledgement message. Is it the examiner's position that one skilled in the art would not be able to make and use a system which compares the information contained in an acknowledgement packet with the retransmission packet at the source radio by considering the specific recited parameters found in each message in order to determine if the acknowledgment packet corresponds to the retransmission packet?

Likewise, Claim 9 is directed to the same feature in means plus function format. Page 9 describes that radio 200 is a software programmable or software defined radio, and that each of the radios can be configured by downloading software to define and configure operating parameters of the radio. Figure 2 illustrates a software programmable radio 200 with TCP filter 204. TCP filter 204 is implemented using

software programmed with the algorithm of comparing the received acknowledgement packet from the destination station with the retransmission packet in the message queue at the source radio by considering the specific recited parameters found in each message as described on pages 23-26. The description of a software definable device programmed with a specific algorithm clearly enables one skilled in the art to make and use applicant's invention.

Reconsideration and withdrawal of the section 112 rejections is requested.

Claim Rejections

Background

Applicant's disclosure is directed to minimizing the amount of unnecessary transmissions in a TCP/IP environment when used with a wireless communications system. Specifically, applicant discloses maintaining a message queue **at the source radio** and providing **the source radio** with functionality to receive and compare acknowledgement messages with messages stored in the message queue in order to minimize unnecessary wireless communications.

Phillips is directed to a system for eliminating unnecessary retransmissions in a TCP/IP environment in wireless communication system. Note, however, that there is no disclosure of maintaining a message queue (or a message queue alternative) **at the source radio**. Instead, Phillips discloses the use of a slow link TCP optimizer which determines whether a data packet is valid based on a round trip timer and data tables.

The data tables stores the sequence number, the end of packet, the expected sequence number and the highest sequence number only for a current time. Phillips determines whether the message is a valid packet, a valid retransmission or an unnecessary retransmitted packet as a function of the round trip timer (RTT) and/or the data tables. (Fig 10; Col. 9 lines 42-63). Importantly, Phillips expressly discloses that the use of the round trip timer and the reduced data in the data tables **"eliminates a need for a buffer queue"**. (Col 9, lines 56-63). Additionally, data tables 516 only stores values for the current time and thus cannot be considered to be a queue at all.

Each of the embodiments disclosed in Phillips locates the slow link TCP optimizer at a network entity **other than the source radio**. For example, in Fig 6, the slow link TCP optimizer 510 (which the examiner asserts is a message queue alternative) is located at the IWF and the IWF is a separate network entity than the base station controller. For example:

> IWF 214 acts as a router between a CDMA network and the internet. IWF 214 sees and understands every TCP IP header that comes through it. CDMA IWF 214 sends the data packets to base station controller 218 for RF Transmission to a CDMA mobile unit 216 which is coupled to remote terminal 110. (Col 7, lines 36-41)

Thus, the IWF 214 is a separate entity from the source station (base station 218). The location of the slow link TCP optimizer at a location other than the source radio does not prevent the unnecessary retransmissions that applicant's disclosure is designed to prevent. For example in Phillips, if the source radio (base station 218) receives an acknowledgement message from destination radio (mobile unit 216) corresponding to a

retransmission message received by the source radio (base station 218) from IWF 214, the source radio will retransmit the retransmission message because IWF 214 has not yet received the acknowledgment message. Note, that there is also no disclosure of any mechanism which allows IWF 214 to stop the retransmission of any message that has already been passed to the source radio (base station 218).

On the contrary, Applicant's disclosure maintains a message queue **at the source radio** so that if an acknowledgement message is received from the destination radio **at the source radio, the source radio** discards the retransmission message in the message queue corresponding to the acknowledgement message.

Other embodiments disclosed in Phillips describe the location of the slow link TCP optimizer to be at network entities other than the source radio. For example, Figure 7 illustrates that the slow link TCP optimizer 510 is located at the internet service provider 114. Phillips also discloses locating the slow link TCP optimizer "as a stand alone system between the PSTN 410 and ISP 114, between ISP 114 and internet 112 or within PSTN 410." (Col. 10 lines 13-19). However, there is absolutely no disclosure of maintaining the slow link TCP optimizer **at the source station**, notwithstanding the fact that the slow link TCP optimizer **does not maintain a message queue** (Col 9., lines 57-63).

Packer discloses a system for preventing the unnecessary transmission of packets in a TCP/IP environment when used with a wireline communications network. Packer discloses holding the packets to be retransmitted for a minimum amount of time to wait

for an acknowledgement packet. If the acknowledgement packet is received before the minimum time, the retransmission packet is discarded. If the acknowledgment message is not received within the minimum time, the retransmission packet is retransmitted. Packer's disclosure of "holding the data to be retransmitted for a minimum time period" would inherently require the use of a message buffer. (Col. 2, lines 66-67).

Rejection under 35 U.S.C. § 102(e)

Claims 8 and 10 are rejected as anticipated by Phillips.

Claim 8 is directed to preventing the storage of duplicate retransmission packets in the message queue maintained at source radio, including the limitation "comparing each received message TCP packet from the source station with the TCP packet in the message queue." As described above, the data tables are clearly not a message queue. However, even if we accept the examiner's position that the data tables are a message buffer alternative, Phillips does not compare each received TCP packet with the message buffer. Note that in Phillips, "if RTT 512 has expired, the data packet is automatically treated as a valid data packet, regardless of whether it is a first transmission of the data packet or a retransmission of a prior data packet." Thus, if the RTT has expired, the received TCP message packet from the source station **will not be compared** with the TCP packet in the message buffer. Thus, Phillips does not disclose the limitation of comparing **each** received message TCP packet from the source station with the TCP packet in the message queue.

Reconsideration and allowance of Claim 8 is requested. Claim 10 depends form Claim 8 and is, therefore, allowable with Claim 8 without regard to the further patentable limitations recited therein. For at least these reasons reconsideration and withdrawal of the anticipation rejection of claim 8 are requested.

Rejection under 35 U.S.C. § 103

All remaining claims are rejected as obvious over Phillips alone, or in combination with Packer. The obviousness rejections are clearly improper as Phillips expressly teaches away from the applicant's disclosure, as well as that of Packer.

Specifically, it is improper for the examiner to disregard the teaching of Phillips which expressly states that a message buffer can be "eliminated" in order to support the examiner's combination of the prior art. The examiner's stated motivation for combining Phillips with Packer "to eliminate unnecessarily [sic] retransmission in the system" is totally without support in light of the express teachings of Phillips which minimizes unnecessary transmission while eliminating a message buffer. Thus, there is absolutely no motivation or suggestion to modify the teachings of Phillips by adding a message queue as taught by Packer.

As there is no basis for the examiner's combination of Phillips with Packer, reconsideration and allowance of Claims 1, 3-6, 11 and 12 is requested.

If any point remains that is deemed best resolved through a telephonic conversation, the

Office is hereby requested to contact the undersigned directly.

Respectfully submitted,

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